

REMARKS

Claims 1 to 44 are pending in the present application. In the above amendments, claims 1, 7, 14, 17, 19, 21, 25, 35, 37, 39, 41 and 43 have been amended. Therefore, after entry of the above amendments, claims 1 to 44 will remain pending in this application. Applicants believe that the present application is now in condition for allowance, which prompt and favorable action is respectfully requested.

Claim Rejections – 35 USC § 102

Claims 1, 2, 4, 5, 7, 10, 14, 15, 17, 19, 21, 22, 25 to 28, 30, 32, 35, 37, 39, 41 and 43 are rejected under 35 USC § 102(b) as allegedly being anticipated by U.S. Patent No. 5,914,950 (“Tiedemann”). Applicants have reviewed the rejection together with the Tiedemann reference and submit that the claims are patentably distinguishable over Tiedemann for at least the following reasons. Reconsideration and withdrawal of the § 102(b) rejection of these claims are respectfully requested.

Independent claim 1 is directed to an apparatus that includes a first encoder for receiving a plurality of symbol streams for respective ones of a plurality of mobile stations and encoding each of the symbol streams with one of a plurality of covering sequences to form a plurality of covered sequences. A summer is provided for summing the plurality of covered sequences to form a first Code Division Multiplexed (CDM) signal and a second encoder is provided for covering the first CDM signal with a covering sequence to form a first covered CDM signal. Claim 1 has been amended to specify that the plurality of symbol streams are for respective ones of a plurality of mobile stations. Support for this amendment is found at least in paragraph [1095] and FIG. 6 of the specification.

Tiedemann concerns a method and apparatus for reverse link scheduling. The Office Action contended that the modulator 74 depicted in FIG. 5 of Tiedemann teaches an apparatus corresponding to that set forth in claim 1. As shown in FIG. 5 of Tiedemann, a number of BSPK and QSPK outputs are fed into modulators 146 and 148 of modulator 74. The Office Action appears to contend that these BSPK and QSPK outputs represent a plurality of symbol streams, as recited in claim 1. Referring to FIG. 4 of Tiedemann, the BSPK and QSPK outputs are generated from data source 70, which Tiedemann describes as being information to be transmitted to a cell. (See Tiedemann, col. 24:14-16). Accordingly, the BSPK and QSPK

outputs are understood to be for a cell and not for respective ones of a plurality of mobile stations. Therefore, independent claim 1 is believed to be allowable over Tiedemann.

Independent claims 17, 21, 25, 37 and 41 include limitations similar to those discussed above with respect to claim 1. For example, each of claims 17, 21, 25, 37 and 41 have been amended to specify that the symbol streams are for respective ones of a plurality of mobile stations. Accordingly, claims 17, 21, 25, 37 and 41 are believed to be allowable over Tiedemann for at least the same reasons as claim 1.

Independent claim 14 is directed to an apparatus, operable with a CDM signal, covered with a first covering sequence, comprising one or more sub-CDM signals, each of the one or more sub-CDM signals comprising a plurality of symbol sequences for respective ones of a plurality of mobile stations covered by a second plurality of covering sequences, respectively. The apparatus includes a receiver for receiving the CDM signal, a first despreader for despreading the received CDM signal with the first covering sequence to produce a despread CDM signal, and a second despreader for despreading the despread CDM signal with one of the second covering sequences to produce a recovered symbol sequence.

Claim 14 also has been amended to specify that the plurality of symbol sequences are for respective ones of a plurality of mobile stations. As discussed above with respect to claim 1, Tiedemann is not understood to disclose this feature. Accordingly claim 14 is believed to be allowable over Tiedemann for at least the same reasons as claim 1.

Independent claims 19, 35, 39 and 43 include limitation similar to those discussed above with respect to claim 14. As with claim 14, these claims have been amended to specify that the plurality of symbol sequences are for respective ones of a plurality of mobile stations. Accordingly, claims 19, 35, 39 and 43 are believed to be allowable over Tiedemann for at least the same reasons as claim 1.

Claims 2, 4, 5, 7, 10, 15, 22, 26 to 28, 30 and 32 depend, either directly or indirectly, from one of the independent claims discussed above. Accordingly, each of these dependent claims is believed to be allowable over Tiedemann for at least the same reason as claim 1. Because each dependent claim is deemed to define an additional limitation, however, the individual consideration of each on its own merits is respectfully requested.

Claims 11, 13, 16, 18, 20, 23, 24, 33, 34, 36, 38, 40, 42 and 44 are rejected under 35 USC § 102(b) as allegedly being anticipated by U.S. Patent No. 6,061,359 (“Schilling”). Applicants

have reviewed the rejection together with the Schilling reference and submit that the claims are patentably distinguishable over Schilling for at least the following reasons. Reconsideration and withdrawal of the § 102(b) rejection of these claims are respectfully requested.

Independent claim 11 is directed to an apparatus that includes a plurality of CDM encoders for receiving a plurality of symbol streams and producing a plurality of covered CDM signals. Each CDM encoder includes a first encoder for receiving the plurality of symbol streams and encoding each of the symbol streams with one of a plurality of covering sequences to form a plurality of covered sequences, and a summer for summing the plurality of covered sequences to form a CDM signal. A time multiplexer is provided for receiving the plurality of covered CDM signals and forming a Time Division Multiplexed (TDM) signal comprising the plurality of covered CDM signals, and a second encoder is provided for covering the TDM signal with a covering sequence to form a covered TDM/CDM signal.

Schilling is not understood to disclose the foregoing features of claim 11. In particular, Schilling is not understood to disclose at least the features of forming a TDM signal comprising a plurality of CDM signals and covering the TDM signal with a covering sequence to form a covered TDM/CDM signal.

Schilling concerns an increased-capacity, packet spread-spectrum system. Referring to FIG. 3 of Schilling, the Office Action has contended that the header devices 46 and 146 form a Time Division Multiplexed (TDM) signal comprising a plurality of covered CDM signals. Applicants respectfully disagree with this characterization of Schilling. Header devices 46 and 146 are understood to concatenate headers to respective multichannel-spread-spectrum signals. (See Schilling, col. 15:10-22). Column 4, lines 7-16, of Schilling, which was cited in the Office Action, indicates that a first header is followed in time by a first multichannel-spread-spectrum signal and a second header is followed in time by a second multichannel-spread-spectrum signal. This citation is not understood to describe a time relationship between the first and second multichannel-spread-spectrum signals, rather it merely indicates that the multichannel-spread-spectrum signals follow their respective headers. Nothing else in Schilling is understood to disclose the feature of forming a TDM signal comprising a plurality of CDM signals.

Referring again to FIG. 3 in Schilling, the Office Action has contended that the multiplier devices 48 and 148 cover a TDM signal with a covering sequence to form a covered TDM/CDM signal. Again, Applicants respectfully disagree with this characterization of Schilling. As

previously discussed, Schilling is not understood to disclose forming a TDM signal and therefore would be unable to cover a TDM signal with a covering sequence. Second, multiplier devices 48 and 148 are understood to shift multichannel-spread-spectrum signals to carrier frequencies. (See Schilling, col. 16:66 – col. 17:7). This shift to carrier frequencies is not understood to correspond to covering a signal with a covering sequence. Therefore, independent claim 11 is believed to be allowable over Schilling.

Independent claims 18, 23, 33, 38 and 42 include limitations similar to those discussed above with respect to claim 11. Accordingly, these claims are believed to be allowable over Schilling for at least the same reasons as claim 11.

Independent claim 16 is directed to an apparatus, operable with a CDM signal, covered with a first covering sequence, comprising one or more TDM signals, each of the one or more TDM signals comprising one or more sub-CDM signals, each of the one or more sub-CDM signals comprising a plurality of symbol sequences covered by a second plurality of covering sequences, respectively. The apparatus includes a receiver for receiving the CDM signal, a first despreader for despreading the received CDM signal with the first covering sequence to produce a despread CDM signal, a demultiplexer for selecting one of the TDM signals from the despread CDM signal, and a second despreader for despreading the selected TDM signal with one of the second covering sequences to produce a recovered symbol sequence.

As discussed with respect to claim 11, Schilling is not understood to disclose forming a TDM signal comprising a plurality of CDM signals and covering the TDM signal with a covering sequence. Accordingly, Schilling cannot disclose despreading such a signal and selecting a TDM signal from the despread signal. Therefore, independent claim 16 is believed to be allowable over Schilling.

Independent claims 20, 36, 40 and 44 contain limitations similar to claim 16 discussed above. Accordingly, these claims are believed to be allowable over Schilling for at least the same reasons as claim 16.

Claims 13 and 24 depend from independent claims 11 and 23 discussed above and therefore are believed to be allowable over Schilling for at least the same reasons as claim 11. Because each dependent claim is deemed to define an additional limitation, however, the individual consideration of each on its own merits is respectfully requested.

Claim Rejections – 35 USC § 103

Claims 3 and 31 are rejected under 35 USC § 103(a) as allegedly being unpatentable over Tiedemann in view of U.S. Patent No. 6,134,215 (“Agrawal”). Claims 6 and 29 are rejected under 35 USC § 103(a) as allegedly being unpatentable over Tiedemann in view of U.S. Patent No. 6,389,056 (“Kanterakis”). Claim 12 is rejected under 35 USC § 103(a) as allegedly being unpatentable over Schilling in view of Tiedemann.

Claims 3, 6, 12, 29 and 31 depend, either directly or indirectly, from respective ones of the independent claims discussed above. In view of the submitted allowability of each of the independent claims, each of these dependent claims is believed to be in condition for allowance for at least the same reasons provided above with respect to the independent claims. Reconsideration and withdrawal of the § 103(a) rejections of these claims are respectfully requested.

Claim Rejections – 35 USC § 112

Claim 7 is rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended claim 7 to overcome this rejection. In particular, claim 7 has been amended to clarify that it is the first encoder that is being referenced in this claim.

With respect to the recited “encoding time,” Applicants submit that this phrase references the time during which the first encoder encodes the symbol streams with covering sequences and not any form of time encoding. Accordingly, claim 7 is believed to particularly point out and distinctly claim the subject matter regarded as the invention. Reconsideration and withdrawal of the § 112 rejection of claim 7 are respectfully requested.

Allowable Subject Matter

Claims 8 and 9 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicants thank the Examiner for the indicated allowable subject matter. Applicants have not rewritten these claims in independent form at time, however, since all claims in the application are believed to be in condition for allowance, as discussed above.

CONCLUSION

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested.

Applicant requests the three month extension to respond to the Office Action and is simultaneously Petitioning for a Revival of this application.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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By: /David Huffaker/
David Haffaker, Reg. No. 56,771
858.845.2110

QUALCOMM Incorporated
Attn: Patent Department
5775 Morehouse Drive
San Diego, California 92121-1714
Telephone: (858) 658-5787
Facsimile: (858) 658-2502
ORC 420474-1.079916.0064